

REMARKS

Claims 27, 28, 32, 33, 37, 39, 64, and 65 are pending in this application. By this Amendment, claims 64 and 65 are added. Support for the amendments to the claims may be found, for example, in the specification at page 37, line 27 to page 38 line 12; page 40, line 13 to page 41, line 6; and Figure 1. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

I. Rejections Under 35 U.S.C. §103

The Office Action rejects claims 27, 28, 32, 33 and 37 under 35 U.S.C. §103 as having been obvious over U.S. Patent No. 5,197,230 to Simpfendorfer et al. ("Simpfendorfer") in view of U.S. Patent No. 6,080,048 to Kotagiri et al. ("Kotagiri"); and rejects claim 39 as having been obvious over Simpfendorfer in view of Kotagiri and U.S. Patent No. 5,967,882 to Duescher ("Duescher"). The rejections are respectfully traversed.

Applicants respectfully note that the Office Action refers to the Duescher reference as "Duescher 5,967,822" and as "822" (see, e.g., page 3, last paragraph). However, the reference is listed on form PTO-892 as US 5,967,882. Applicants believe that the Office Action intended to cite to "Duescher 5,967,882." Clarification is respectfully requested.

Independent claims 27 and 32 recite in part, "[t]he upper turn table further comprising a plurality of load supporting points disposed along a second pitch circle having a second diameter equal to the first diameter, the load supporting points configured to receive and distribute applied force to the upper turn table; the lower turn table further comprising a plurality of load supporting points disposed along a third pitch circle having a third diameter equal to the first diameter, the load supporting points configured to receive and distribute applied force to the lower turn table" (emphasis added). Despite their asserted disclosures,

Simpfendorfer, Kotagiri and Duescher, alone or in combination, fail to teach or suggest each and every feature of claims 27 and 32.

As discussed in the specification, a device in accordance with claim 27 and a method in accordance with claim 32 provide the following results that are unexpected over the prior art:

...it is possible to provide turn table deformation with improved responsiveness to changes in polishing conditions during wafer polishing, thus facilitating the turn table shape control. Thereby, there can be provided the apparatus that allows the turn table shape control by properly changing polishing conditions in accordance with changes in polishing ability and other factors of polishing pads over time during repeated polishing of a plurality of batches of wafers, and that is capable of polishing with controlling easily batch-by-batch wafer shape without deteriorating wafer shape.

See specification at page 9, line 8 to page 10, line 6.

On the other hand, Simpfendorfer describes in column 1, lines 30–44, that an object of its invention is to provide:

...an automatic control system for causing a constant pressure to be applied between the upper and lower finishing disks during the machining of workpieces and the dressing of the finishing disks and for effecting an automatic vertical adjustment of the finishing disks and an adjustment of optimum speed ratios during the machining of workpieces and the dressing of the finishing disks in accordance with a program which has been stored in the memory of the control system so that reproducible results of the operation will be produced in the accuracy range which is associated with the process....

and to provide a machine which can be "designed for a high degree of automation." And, as described in column 4, lines 18–58, what is shown in Fig. 4 is a specific explanation of a system to achieve the above object, that is, a specific explanation of a method of the automatic control of the axial force F .

The Office Action, on page 3, alleges that Simpfendorfer's description of engaging pressure P_e corresponds to the recited load supporting points. However, Simpfendorfer describes in column 4, lines 18–40, that the axial force causes "a characteristic engaging

pressure P_e to be applied between the finishing disks 8 and 22 and the workpieces 36 in dependence on the area in which said disks contact said workpieces. The actual value of the force which is thus exerted on the bearing means for the lower finishing disk 22 is taken up by pressure force pickups 30." Simpfendorfer further describes in column 4, lines 40–58, that the apparatus gets feedback of an axial force by force pickups (pressure force pickups) 30, etc., and controls " Δ_{PH} " so that the contact pressure remains constant within narrow limits.

Accordingly, "engaging pressure P_e " as described in Simpfendorfer is conceptually different from "a plurality of load supporting points" as required by independent claims 27 and 32. In other words, "engaging pressure P_e " as taught by Simpfendorfer describes the pressure in which the upper and lower finishing disks press the workpieces, while the claimed "load supporting points" are configured to receive and distribute applied force to the upper and lower turn tables.

Applicants respectfully submit that the recited "load supporting points" cannot be reasonably construed to read on Simpfendorfer's engaging pressure P_e . In addition to the reasons discussed above, Simpfendorfer makes no mention that the arrows used to show "engaging pressure P_e " in Fig. 4 are 1) load supporting points, or 2) are configured to receive and distribute applied force to the upper and lower turn tables, or 3) are disposed along a pitch circle having a diameter equal to a first diameter of a first pitch circle where the center of each wafer holding hole is disposed along the first pitch circle. In fact, Fig. 4 of Simpfendorfer fails to diagram any P_e arrows that line up with the center of workpieces 36. Therefore, the features of claims 27 and 32 would not have been at all obvious to one of skill in the art at the time of invention from the disclosures of Simpfendorfer.

Kotagiri and Duescher fail to cure the deficiencies of Simpfendorfer discussed above. Therefore, Simpfendorfer, Kotagiri, and Duescher, considered alone or in combination, fail to

teach or suggest all the features of claims 27 and 32, or the claims dependent therefrom.

Accordingly, reconsideration and withdrawal of the rejections are respectfully requested.

II. New Claims

By this Amendment, new claims 64 and 65 are presented. New claims 64 and 65 depend from claims 27 and 32 respectively and, thus, distinguish over the applied references for at least the reasons discussed above with respect to claims 27 and 32. Furthermore, the Office Action states, "Applicant may overcome this rejection by clearly and definitely claiming the fixing devices of the upper plate, and the thrust bearings of the lower plate, that provide the load support points." *See* Office Action, page 4, lines 15-17. Prompt examination and allowance of new claims 64 and 65 are respectfully requested.

III. Conclusion

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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